REMOTE LIGHT PEN DETECTION USING THE VIDEO CABLE

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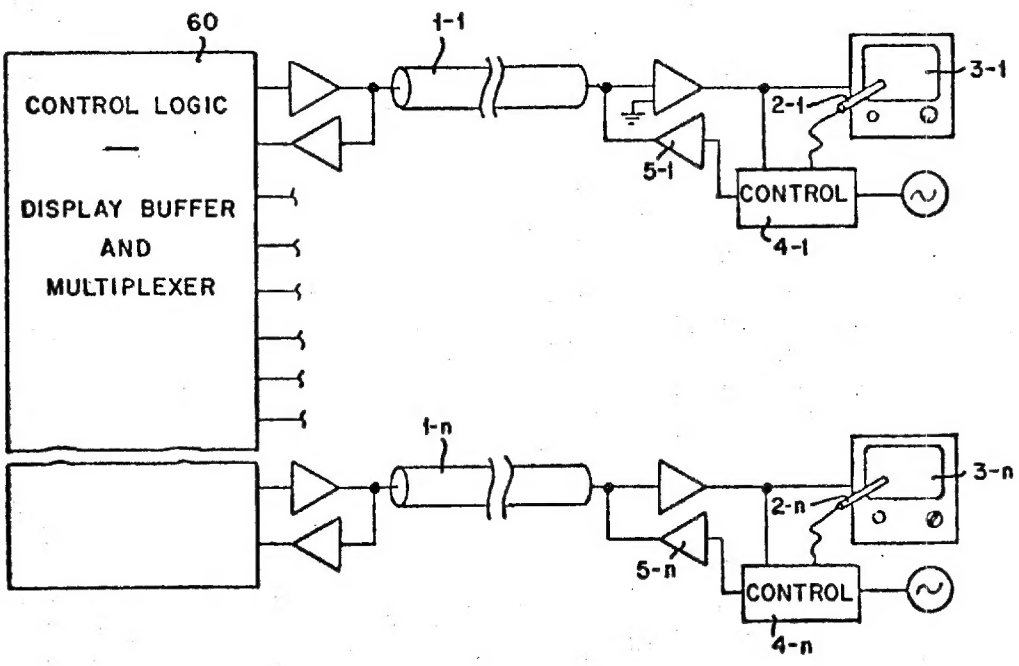

The varying lengths and nonuniform characteristics of coaxial cables 1-1...1-n, in a Computer Assisted Information Display System within limits, do not affect the data in this system. Furthermore, the need for separate input-output signal lines for probes 2-1...2-n is eliminated. A short burst of high-frequency energy is applied to the driver at the end of each horizontal scanning pulse when a probe, e.g., 2-1, is activated. Another burst of high-frequency energy is applied when probe 2-1 is triggered by illumination of the cathode ray beam striking the phosphors on video display 3-1.

When proble 2-1 is activated, control 4-1 gates a short burst of high-frequency energy from the associated oscillator to driver 5-1 at the end of each horizontal pulse. Another burst of high frequency is gated to driver 5-1 when the probe is triggered by the light of the CRT. The high-frequency bursts are detected at the other end of the line and the detected signal is multiplexed to control logic unit 60. By determining the time between the horizontal sync burst and the burst sent when the probe is activated, the position of probe 2-1 in the scan can be determined.

The probe position can be determined from either the scanning voltages being sent to the display, whose accuracy depends on the line length, or by counting the horizontal burst after vertical synchronized pulses which are accurate independently of cable length. This is done

REMOTE LIGHT PEN DETECTION USING THE VIDE CABLE - Continued

by resetting a scan counter at vertical sync pulse time and counting the horizontal bursts. Each horizontal burst can reset a bit or character counter which is blocked when the burst set up by the probe is detected. The burst triggered by the probe then also blocks the horizontal burst counter. Therefore, after receiving the second burst, the counters contain the information for the location of the probe. Thus, only one cable is required to service each combination of TV monitor 3-1...3-n and probe 2-1...2-n.